IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Original): A time-resolved measurement apparatus for acquiring position information and timing information of a quantum beam generated due to excitation of a sample, comprising:

a signal generator for generating a reference time pulse in synchronization with the excitation of the sample;

a detector for detecting the quantum beam and for generating a position signal corresponding to a detection position, and a detection timing pulse synchronized with a detection timing;

a position calculator for calculating the detection position using the position signal;

a time difference measuring device for measuring a time difference between the reference time pulse and the detection timing pulse; and

a data processor for storing the detection position calculated by the position calculator and the time difference measured by the time difference measuring device, in association with each other,

the detector having a position-sensitive electron multiplier tube,

the electron multiplier tube having a micro channel plate for generating an electron at a position corresponding to an incidence position of the quantum beam on the electron multiplier tube and for multiplying the electron while maintaining the position, and an output terminal electrically connected to the micro channel plate,

the detection timing pulse being generated in response to a potential change that occurs when the electrons multiplied by the micro channel plate are emitted from the micro channel

plate, and being fed from the micro channel plate to the time difference measuring device through the output terminal, and

the data processor correcting the time difference according to a distance between a position at which the detection timing pulse is generated on the micro channel plate and the output terminal, and storing the corrected time difference in association with the detection position.

Claim 2 (Original): A time-resolved measurement apparatus according to claim 1, wherein the data processor removes a time necessary for the detection timing pulse to travel from the position at which the detection timing pulse is generated to the output terminal, from the time difference measured by the time difference measuring device, thereby correcting the time difference.

Claim 3 (Currently Amended): A time-resolved measurement apparatus according to claim 1 [[or 2]], wherein the data processor sets a plurality of sampling points on the micro channel plate, acquires and interpolates correction data for the detection timing pulse generated at each sampling point, and corrects the time difference using the interpolated correction data.

Claim 4 (Currently Amended) A time-resolved measurement apparatus according to claim 1 ~~any one of claims 1 to 3~~, wherein the data processor accumulates the detection position and the time difference over plural times of the excitation of the sample.

Claim 5 (Original): A time-resolved measurement apparatus according to claim 4, wherein the data processor uses the accumulated time differences to create a histogram of the time differences associated with a specific detection position.

Claim 6 (Currently Amended): A time-resolved measurement apparatus according to claim 5, wherein the sample has a circuit including a plurality of semiconductor devices that can emit the quantum beams [[light]] upon their operation,

wherein the excitation of the sample is to activate the circuit to operate the semiconductor devices in turn, and

wherein the data processor specifies the detection positions corresponding to the positions of the semiconductor devices, and calculates the time differences corresponding to peaks in the histograms for the specified detection positions.

Claim 7 (Currently Amended): A time-resolved measurement apparatus according to claim 1 ~~any one of claims 1 to 6~~, wherein the position-sensitive electron multiplier tube is a position-sensitive photomultiplier tube having a photocathode for converting the quantum beam into a photoelectron by photoelectric effect, and

wherein the micro channel plate is located opposite the photocathode and configured to receive the photoelectron from the photocathode to generate and multiply secondary electrons.